Health Alert:
Pertussis Alert for Southeastern and Eastern Missouri

October 20, 2008

This document will be updated as new information becomes available. The current version can always be viewed at http://www.dhss.mo.gov

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

Office of the Director
912 Wildwood
P.O. Box 570
Jefferson City, MO 65102
Telephone: (800) 392-0272
Fax: (573) 751-6041
Web site: http://www.dhss.mo.gov

Health Alert
Date October 20, 2008

FROM: **JANE DRUMMOND**
DIRECTOR

SUBJECT: **Pertussis Alert for Southeastern and Eastern Missouri**

The Missouri Department of Health and Senior Services alerts health care providers to a 231% increase in pertussis in Eastern Missouri and an 88% increase in Southeastern Missouri, as compared to the same time period during the previous five years (2003-2007). The increase is based on a total of 203 reported pertussis cases in Missouri from January 1 to October 13, 2008. The 8-14 year-old age group represented 53% of cases in Eastern Missouri. Local health departments are currently working on several school outbreaks. School and community outbreaks of pertussis can last for several months, causing disruption in school and extracurricular activities, and placing burden on affected families. The attack rates in school settings can range from 3-5% to 50-74%. Thus, prompt recognition and control of outbreaks is of paramount importance. Existing epidemiological experience from different outbreaks shows that ***pertussis may occur in fully vaccinated persons***. Pertussis vaccination is only 85% effective, and the immunity wanes over time.

Clinical Manifestations

Pertussis is highly communicable and can cause severe disease in very young children. It begins with mild upper respiratory tract symptoms and progresses to cough. The condition can further progress to severe paroxysms, often with a characteristic inspiratory whoop followed by vomiting. Fever is absent or minimal. Among older children and adults, the disease usually results in symptoms that can be mistaken for bronchitis and URI's – persistent cough, but no whoop. In infants younger than six months, apnea is a common manifestation and the whoop may be absent. It is important to remember that while pertussis is most often considered a young child's disease, it can occur at any age. Pertussis should be considered in older children and adults who have a persistent cough lasting more than 7-14 days, which cannot be attributed to another specific illness. If untreated, these older children and adults can act as a reservoir for pertussis disease and infect younger children.

Diagnostic Testing

Pertussis kits, including swabs and transport media, can be obtained from local public health agencies or the Missouri State Public Health Laboratory (573-751-3334).

The only pertussis diagnostic tests endorsed by the Centers for Disease Control and Prevention (CDC) are culture and Polymerase Chain Reaction. The CDC guidelines for laboratory confirmation of pertussis cases ***do not include serologic testing.*** Obtaining a positive culture result from a person with pertussis can be affected by several factors such as how the specimen is handled, the stage of illness at the time of specimen collection, the use of antimicrobial therapy prior to culture, immunity from past infection or from vaccination, and age of the case-patient. Several studies have shown that specimens obtained for culture are more likely to be positive within three weeks of cough onset. The PCR test could be positive beyond the three-week period. If a case-patient is symptomatic in the absence of another cause and is a close contact of a confirmed pertussis case, the Missouri Department of Health and Senior Services does not recommend testing before treating the case-patient.

Treatment

Specific treatment recommendations are outlined in the American Academy of Pediatrics Red Book (see reference below). The Red Book and the CDC recommend erythromycin as well as the newer macrolides, clarithromycin or azithromycin dihydrate as the antimicrobial agents for treatment of and prophylaxis against pertussis. A possible alternative for patients who do not tolerate erythromycin is trimethoprim-sulfamethoxazole (TMP-SMZ). Once into the paroxysmal stage, antibiotics will not ameliorate the disease but will limit the spread to others. The patient should be isolated for five days after the initiation of treatment. If appropriate antimicrobial therapy is contraindicated or the patient refuses treatment, the patient should be isolated until three weeks after the onset of paroxysms. Local health departments can provide epidemiological consultation when required.

Prophylaxis of Household and Other Close Contacts

Chemoprophylaxis is recommended for all household and other close contacts regardless of age or whether contact has pertussis-like symptoms or immunization status. Close contacts are defined as those persons having direct contact with respiratory, oral, or nasal secretions from a symptomatic case-patient; having direct face-to-face contact, regardless of duration with a symptomatic case; or having shared a confined space in close proximity for a prolonged period of time with a symptomatic case.

Management of pertussis in schools and child-care facilities requires:

1. Identification and evaluation of cases.
   - Immediate notification of the local health department and school nurse.
   - Collection of a nasopharyngeal specimen for detection of *B. Pertussis.*
   - Treatment of cases.
2. Identification of high-risk contacts and close contacts. (High-risk contacts are persons at risk for developing severe disease and adverse outcomes.)
3. Chemoprophylaxis for all close contacts.
4. Chemoprophylaxis for high-risk contacts (that are not close contacts) should be considered and evaluated on case-by-case basis.
5. Initiation of active surveillance for pertussis in the child-care centers, or schools and continuation of surveillance until six weeks after cough onset of the last confirmed or suspected case. In schools where outbreaks are occurring, health officials recommend a *school policy of student exclusion for cough illness* until pertussis is ruled out or an alternative diagnosis is established, or suspected cases have been on appropriate antimicrobial treatment for at least five days. School nurses should require notes from medical providers confirming negative pertussis test results or an alternative diagnosis, or treatment documentation before ill students can be re-admitted to schools.
6. Assessment of the immunization status of students and staff and immunization as needed.

Immunization

The best way to reduce the incidence of pertussis is to have a highly vaccinated population. This should be accomplished through physicians' offices and public health clinics. Close contacts under the age of 7 who are unimmunized or underimmunized should have pertussis immunization initiated or continued according to the recommended schedule. Children who received their third dose six months or more before exposure should be given a fourth dose at this time. Children who received their fourth dose three or more years before exposure and who are younger than 7 years of age should be given a fifth dose of DTaP at this time. A booster Tdap vaccine should be given to people 11–18 years of age if they previously have not received Tdap. Adults 19-64 years of age should receive a single dose of Adacel if it has been more than two years since their last Td vaccine. Shorter intervals can be considered if necessary.

Reporting

Health care providers are also requested to assist in the control of pertussis through immediate reporting of suspect cases by telephone to their local public health agency or the Missouri Department of Health and Senior Services (800-392-0272).

References:

1. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine - Preventable Diseases. Atkinson W, Hamborsky J, McIntyre L, Wolfe S, eds. "Pertussis." 10th ed. Washington DC: Public Health Foundation, 2008, 81 – 99. http://www.cdc.gov/nip/publications/pink/default.htm

2. American Academy of Pediatrics. "Pertussis". In: Pickering L, ed. *Red Book: 2006 Report of the Committee on Infectious Diseases*. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006: 498 – 520.

DtaP = Diptheria, Tetanus, and Pertussis
Tdap = Tetanus, Diptheria, and Pertussis
Td = Tetanus Dipteria